Message

**From:** Nelson, Walt [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=023BD72E66A348018F63B4786C65C51B-NELSON, WALT]
**Sent:** 7/12/2016 6:02:08 PM
**To:** Cox, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cddd6a5bb3c2477183799ef56cdb464f-Cox, Michael]; Brown, Cheryl A. [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dd6f8a562924439aaf97ca98ddaf1e10-Brown, Cheryl]; Labiosa, Rochelle [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ded3654216c9461d95cd5a3ceec507ef-Labiosa, Rochelle]
**Subject:** Pteropod map and data files
**Attachments:** WC_pteropod.pdf; West-Coast-OA-Data_2007_2011_2012_2013_for_WSDE.xlsx

Mike, Rochelle:
Attached is the map file Pat Clinton put together for the 2011, 2013 and 2014 stations with Pteropod data. He checked distance (in feet) from shore for stations which appear close to or within the 3 nm limit, so you can determine distance with respect to both nm and statute miles. All 5 in question are within 3 nm. These data are on the last worksheet of the attached spreadsheet (an image).

On the 2014 pteropod worksheet in the attached spreadsheet, I plotted the 2014 pteropod damage % versus undersaturation %. The plot is not as elegant as the one Cheryl did, but you can see that there is a great deal of variance in the Puget Sound data. I plotted each month as a separate data series, and the regression stats for each are given to the right of the figure. I also computed the regression stats for the entire 2014 pteropod data set (at the bottom). There was no statistically significant relationship within the three months, of for the data set as a whole of pteropoda damage versus undersaturation. You can see that as time progresses, undersaturation increases, and damage proportion does too. I did not test the relationship for the Sept. and Oct. data combined. I also plotted the data for the four 2014 stations for which there were 3 time period measurements to try to get an impression of variation within a station. It is pretty large.

I did not have time to see if anything falls out spatially, but this would be worth looking at.

Hope this is helpful.

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Walt Nelson
Asst. to Division Director
Western Ecology Division, US EPA
2111 S.E. Marine Science Dr.
Newport OR 97365
541-867-4041

**From:** Cox, Michael
**Sent:** Monday, July 11, 2016 1:46 PM
**To:** Brown, Cheryl A. <Brown.Cheryl@epa.gov>; Labiosa, Rochelle <labiosa.rochelle@epa.gov>; Nelson, Walt <Nelson.Walt@epa.gov>
**Cc:** Cox, Michael <Cox.Michael@epa.gov>
**Subject:** RE: submission of NOAA and University of Washington data related to pH 303(d) data call

We have an OA meeting on Wednesday at 1:00 to discuss the data submitted by NOAA/UW.

**Walt/Cheryl**: Not sure if you or the GIS person would have time to plot the pteropod sites before the meeting? Also, as Rochelle requested below if possible to create a plot like the one attached. I found that plot very useful. So here is where I think we are:

1. **West-Coast-OA-Data_2007 …**
   - 2011 pteropod data. I think Cheryl plotted before (see attached). No samples in Oregon waters.
   - 2013 pteropod data. Cheryl plotted but has not transferred yet. From below, no pteropod samples in Oregon waters.

2. **NANOOS_WAOC_data…**
   - This is from WA and Puget Sound. Would need to link up lat/long with pteropod data.
   - **Walt/Cheryl**: Would you have time or your GIS person have time to do before our Wednesday OA meeting?

Rochelle is right, no decision on the listing has been made. We were waiting for the data from NOAA/UW.

Thanks for helping to move this forward.

Michael Cox
Office of Environmental Assessment
US EPA Region 10, 1200 Sixth Avenue, Suite 900
Seattle, WA 98101
206-553-1597
cox.michael@epa.gov

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**From:** Brown, Cheryl A.
**Sent:** Friday, July 08, 2016 2:23 PM
**To:** Labiosa, Rochelle <labiosa.rochelle@epa.gov>; Nelson, Walt <Nelson.Walt@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Subject:** RE: submission of NOAA and University of Washington data related to pH 303(d) data call

I would be happy to do that after I get all these sensors working. things are looking better but still jammed up with experiment.
Cheryl

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**From:** Labiosa, Rochelle
**Sent:** Friday, July 08, 2016 2:06 PM
**To:** Brown, Cheryl A. <Brown.Cheryl@epa.gov>; Nelson, Walt <Nelson.Walt@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Subject:** RE: submission of NOAA and University of Washington data related to pH 303(d) data call

It would be interesting to plot up what they sent the way you did before, Cheryl, for the Oregon points and see if relationships hold? I am also curious about a similar plot for Puget Sound.

Rochelle Labiosa, Ph.D.
Office of Water and Watersheds
US EPA, Region 10
1200 Sixth Avenue, Suite 900, MC: OWW-191
Seattle, WA 98101-3140
Ph: 206.553.1172
Fax: (206) 553-0165

**From:** Brown, Cheryl A.
**Sent:** Friday, July 08, 2016 1:50 PM
**To:** Labiosa, Rochelle <labiosa.rochelle@epa.gov>; Nelson, Walt <Nelson.Walt@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Subject:** RE: submission of NOAA and University of Washington data related to pH 303(d) data call

Yeah, I think the confusion happens because there is chemistry data at more locations that are nearshore, but not all sites have pteropoda data. Also, they might be thinking of CA waters, there are definitely sites closer to shore in CA. Cheryl

**From:** Labiosa, Rochelle
**Sent:** Friday, July 08, 2016 11:35 AM
**To:** Brown, Cheryl A. <Brown.Cheryl@epa.gov>; Nelson, Walt <Nelson.Walt@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Subject:** RE: submission of NOAA and University of Washington data related to pH 303(d) data call

The decision has not been made to my knowledge – Jill Fullagar would have the latest, but last I heard we were waiting for the NOAA dataset with the expectation that data could be available in state waters for OR and WA. I am surprised that only one data point is within OR state waters, given what NOAA staff said; however, they did mention that they are collecting more data this year although I imagine it will not be available for 6 months or so? Do you recall, Cheryl?

Rochelle Labiosa, Ph.D.
Office of Water and Watersheds
US EPA, Region 10
1200 Sixth Avenue, Suite 900, MC: OWW-191
Seattle, WA 98101-3140
Ph: 206.553.1172
Fax: (206) 553-0165

**From:** Brown, Cheryl A.
**Sent:** Friday, July 08, 2016 10:18 AM
**To:** Labiosa, Rochelle <labiosa.rochelle@epa.gov>; Nelson, Walt <Nelson.Walt@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Subject:** RE: submission of NOAA and University of Washington data related to pH 303(d) data call

Yep, we plotted locations this Am. It looks like 2013 pteropod data, the closest point to Oregon state waters is one sampling location point about 3.5 statute miles from Oregon shoreline; and no data within WA state waters; some points in CA may be in state waters.

For the 2011 pteropod data, no sampling locations in OR or WA state waters.

Some of the chemistry data is the same source of the data that I downloaded previously for the white paper we prepared.

And 2014 NANOOS pteropod data are within Puget Sound (so in WA state waters).

I can work on this more later but I'm still fighting with getting up 14 pH sensors for a mesocosm experiments.

By the way, there was a comment made during our call referring to Oregon waters analysis that we did Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Cheryl

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**From:** Labiosa, Rochelle
**Sent:** Friday, July 08, 2016 9:54 AM
**To:** Nelson, Walt <Nelson.Walt@epa.gov>; Brown, Cheryl A. <Brown.Cheryl@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Subject:** RE: submission of NOAA and University of Washington data related to pH 303(d) data call

Makes sense – probably just dumped it out of the GPS and did not convert it. Would be good to verify – but I know they have station names associated and it is likely that Cheryl can tell if they are correctly plotted since she is familiar with the typical cruise locations.

Rochelle Labiosa, Ph.D.
Office of Water and Watersheds
US EPA, Region 10
1200 Sixth Avenue, Suite 900, MC: OWW-191
Seattle, WA 98101-3140
Ph: 206.553.1172
Fax: (206) 553-0165

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**From:** Nelson, Walt
**Sent:** Friday, July 08, 2016 8:19 AM
**To:** Labiosa, Rochelle <labiosa.rochelle@epa.gov>; Brown, Cheryl A. <Brown.Cheryl@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Subject:** RE: submission of NOAA and University of Washington data related to pH 303(d) data call

Pat Clinton, our GIS guy suggests the following on the funky longitudes. I have not tried to plot the revised numbers yet.

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This might be the answer. Looks better anyway....

=(360-C2)*-1

normally longitude is reported up to 180 degrees but there are 360 degrees total
so negative numbers are west, 124W = -124 and 124E = 124
so 236 = -124

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Walt Nelson
Asst. to Division Director
Western Ecology Division, US EPA
2111 S.E. Marine Science Dr.
Newport OR 97365
541-867-4041

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**From:** Labiosa, Rochelle
**Sent:** Thursday, July 07, 2016 11:49 AM

**To:** Nelson, Walt <Nelson.Walt@epa.gov>; Brown, Cheryl A. <Brown.Cheryl@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Subject:** RE: submission of NOAA and University of Washington data related to pH 303(d) data call

Hi Cheryl and Walt, to my knowledge Mike took out the reference to ORD (only R10 programs cited).

Re the xls – both xls spreadsheets have pteropod data, but the (#3 in their list) NANOOS is WA/PS only. The other xls (#2) has data from the other cruises, and was to include any data they have from near-coastal stations. I looked at it quickly and there are two sheets with pteropod data from two different years; the longs looked odd though for one of the sheets. Please take a look and let me know what you think.

Rochelle Labiosa, Ph.D.
Office of Water and Watersheds
US EPA, Region 10
1200 Sixth Avenue, Suite 900, MC: OWW-191
Seattle, WA 98101-3140
Ph: 206.553.1172
Fax: (206) 553-0165

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**From:** Nelson, Walt
**Sent:** Thursday, July 07, 2016 11:45 AM
**To:** Labiosa, Rochelle <labiosa.rochelle@epa.gov>; Brown, Cheryl A. <Brown.Cheryl@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Subject:** RE: submission of NOAA and University of Washington data related to pH 303(d) data call

Rochelle:
Two items:
If the email to OW has not yet gone out, Cheryl and I thought it would be better the not include the statement about ORD vetting the comments, imply because we don't feel that we can speak for ORD.

Second item, before moving to plot the station locations, I assume the only additional data needing location plots is the 2014 data included in the file "NANOOS_WQAC…." . Is that correct?

Thanks
Cheryl is kind of buried at the moment with a lab mesocosm experiment that is trying out the new pH sensor recording system. Lots of bugs to work out.

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Walt Nelson
Asst. to Division Director
Western Ecology Division, US EPA
2111 S.E. Marine Science Dr.
Newport OR 97365
541-867-4041

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**From:** Labiosa, Rochelle
**Sent:** Wednesday, July 06, 2016 11:30 AM
**To:** Brown, Cheryl A. <Brown.Cheryl@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Cc:** Nelson, Walt <Nelson.Walt@epa.gov>
**Subject:** FW: submission of NOAA and University of Washington data related to pH 303(d) data call

Hi Mike,

Sending to Cheryl and Walt, as Walt requested. Mike, do you want to forward to the full OA group and set up the time to discuss next week or would you like me to do that? The first xls contains the broader cruise data, while NANOOS is for WA coast and PS.

Rochelle Labiosa, Ph.D.
Office of Water and Watersheds
US EPA, Region 10
1200 Sixth Avenue, Suite 900, MC: OWW-191
Seattle, WA 98101-3140
Ph: 206.553.1172
Fax: (206) 553-0165

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**From:** Labiosa, Rochelle
**Sent:** Thursday, June 30, 2016 4:03 PM
**To:** Fullagar, Jill <Fullagar.Jill@epa.gov>; Cox, Michael <Cox.Michael@epa.gov>
**Subject:** FW: submission of NOAA and University of Washington data related to pH 303(d) data call

FYI – I guess the attachments did not get retained in my reply

Rochelle Labiosa, Ph.D.
Office of Water and Watersheds
US EPA, Region 10
1200 Sixth Avenue, Suite 900, MC: OWW-191
Seattle, WA 98101-3140
Ph: 206.553.1172
Fax: (206) 553-0165

**From:** Simone Alin - NOAA Federal [mailto:simone.r.alin@noaa.gov]
**Sent:** Thursday, June 30, 2016 3:00 PM
**To:** Labiosa, Rochelle <labiosa.rochelle@epa.gov>
**Cc:** Richard Feely - NOAA Federal <Richard.A.Feely@noaa.gov>; Adrienne Sutton - NOAA Affiliate <adrienne.sutton@noaa.gov>; JAN NEWTON <janewton@uw.edu>; Nina Bednarsek - NOAA Affiliate <nina.bednarsek@noaa.gov>
**Subject:** Fwd: submission of NOAA and University of Washington data related to pH 303(d) data call

Dear Rochelle,

We wanted to send you a copy of the documents and data that we just submitted to the Washington Department of Ecology to keep you in the loop. We included two staff members from the Center for Biological Diversity in carbon copy, because they had both separately contacted us to request that we submit all our data to Ecology. Please let us know if you have any questions about any of the attached.

All the best,
Simone Alin, Richard Feely, Adrienne Sutton, Jan Newton, and Nina Bednarsek

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Simone Alin, Ph.D.
Supervisory Oceanographer

NOAA Pacific Marine Environmental Laboratory
7600 Sand Point Way NE, Bldg 3
Seattle, WA 98115
Tel (206) 526-6819

---------- Forwarded message ----------
From: **Simone Alin - NOAA Federal** <simone.r.alin@noaa.gov>
Date: Thu, Jun 30, 2016 at 2:56 PM
Subject: submission of NOAA and University of Washington data related to pH 303(d) data call
To: 303d@ecy.wa.gov, Jake Kleinknecht <jake.kleinknecht@ecy.wa.gov>
Cc: Abel Valdivia <avaldivia@biologicaldiversity.org>, Miyoko Sakashita <miyoko@biologicaldiversity.org>, Richard Feely - NOAA Federal <Richard.A.Feely@noaa.gov>, JAN NEWTON <janewton@uw.edu>, Nina Bednarsek - NOAA Affiliate <nina.bednarsek@noaa.gov>, Andrea Fassbender - NOAA Affiliate <andrea.fassbender@noaa.gov>

Dear Mr. Lizon and Mr. Kleinknecht:

Please find attached several documents. They include:

1) A letter that details our data submission, including both pH observations and biological indicator data;

2) A data file from NOAA-led coastal cruises along the U.S. West Coast (includes both pH and biological observations, on separate tabs);

3) A data file from UW-led cruises focusing on Puget Sound and Strait of Juan de Fuca waters with some Washington coastal data as well (includes both pH and biological observations, on separate tabs);

4) Two DOCX attachments representing a submitted manuscript by Dr. Nina Bednarsek and colleagues on the biological indicator guidelines that are included in items 2 and 3 (indicator_paper_Frontiers_6_29_final.docx). Supplemental material for this paper are in the file Techniques for monitoring_6_29_NB.docx.

Please let us know if you have any questions.

Sincerely,
Simone Alin, Richard Feely, Adrienne Sutton, Jan Newton, and Nina Bednarsek

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Simone Alin, Ph.D.
Supervisory Oceanographer
NOAA Pacific Marine Environmental Laboratory
7600 Sand Point Way NE, Bldg 3
Seattle, WA 98115
Tel (206) 526-6819